

CLAIMS:

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A clock having a clock face with at least one hand and having a clock-work mechanism with at least one concentric motion arbor to move the hand around an axis of rotation of the hand, in which the clock face, when viewed in a clock-wise direction, has a surface which is not symmetric to the rotation, in which the at least one hand is pivotably anchored at an inner end which is adjacent to the axis of rotation around a second axis perpendicular to the axis of rotation and perpendicular to a third pivoting axis which runs in the same plane as a longitudinal axis of the hand in such a way that it can pivot, and in which a control is provided with which the hand can be pivoted about the second axis of rotation in such a manner that it moves over the surface of the clock face at an essentially constant distance, wherein

the hand, at or near its inner end which is facing the first axis of rotation, is attached around the third axis of rotation running longitudinally to the hand in such a manner that it can rotate,

the hand is two-dimensional in its visible area, and

an additional control is provided with which the hand can be rotated around the third axis of rotation along its longitudinal orientation such that in its rotation it moves essentially parallel to the surface of the clock face.

2. A clock according to claim 1, wherein the additional control is a rotational control located in the center of the clock which is formed by a mechanical cam with one such cam for each hand, the curvilinear form of which is made according to the course of the clock face surface when viewed in a clock-wise direction, each mechanical cam is formed by a stationary disc or drum with a control groove, the disc or drum being concentric with the relevant motion arbor, and a control lever linked with an appropriate hand is restrained in each control groove whereby the appropriate hand can be rotated round its axis of rotation

running along its longitudinal orientation as determined by the course of the control groove as the hand circles the clock face.

3. A clock according to claim 1 wherein the control for the pivoting of the hand and the additional control for the rotation of the hand around the third axis of rotation are grouped together into a combined control.

4. A clock according to claim 3, wherein the combined control is formed by a calculated mechanical cam for each hand which is formed on or in the cover of a stationary conical or truncated cone-shaped control component concentric to the rotational axis of the hand and a control lever is restrained in a cam by a pair of control rollers with two control rollers separated from each other in the longitudinal orientation of the cam, whereby the distance of the cam from the axis of rotation of the hand determines the pivot position of the hand and the slope or direction of the cam between the two guide rollers of the pair of guide rollers determines the rotational position of the hand around the third axis of rotation of the hand.

5. A clock according to claim 4, wherein the external radial contour of each conical or truncated cone-shaped control component is shaped in such a manner that it follows the rotating cam at a constant distance.

6. A clock according to claim 1, wherein at least one of the control and the additional control is formed by an electric servo-motor for each hand and successive mechanical actuators, instead of mechanical cams, with which the relevant hand is rotated around at least one of the second and third axis of rotation during its course according to electric control signals corresponding to the course of the surface of the clock face.

7. A clock according to claim 1 wherein at least one of the control and the additional control is formed by a controlled electro-magnet for each hand and successive mechanical actuators, instead of mechanical cams, with which the relevant hand is rotated around at least one of the second and third axis of rotation during its course according to electric control signals corresponding to the course of the surface of the clock face.

8. A clock according to claim 1, wherein the control is formed by a position-controlled piston and cylinder unit for each hand and successive mechanical actuators, instead of mechanical cams, with which the relevant hand is rotated around at least one of the second and third axis of rotation of the hand during its course according to electric control signals corresponding to the course of the surface of the clock face.

9. A clock according to claim 1, wherein rotating and pivoting bearings of the hand and the controls are arranged on a visible side of the clock face and the hand extends outwards from a center of the clock face.

10. A clock according to claim 1, wherein rotating and pivoting bearings of the hand and the controls are arranged on a side of the clock face which cannot be seen and the hand extends outwards from a center of the clock face and then round a radially external edge of the clock face and then extend radially inwards in front of the clock face.

11. A clock according to claim 10, wherein said hand extends radially inwards over less than half of a diameter of the clock face.

12. A clock according to claim 11, wherein there is positioned at least one additional functional element in a central area over which the hand does not revolve.

13. A clock according to claim 12, wherein said additional functional element is selected from the group consisting of a light, a text, an advertising vehicle and a decorative element.

14. A clock according to claim 1, wherein the surface of the clock face is formed from two partial surfaces which adjoin each other at their base at an angle α which is not equal to 180° .

15. A clock according to claim 1, wherein the surface of the clock face is formed by three partial surfaces with edges running radially whereby the partial surfaces adjoin each other at their radially arranged edges at an angle α which is not equal to 180° .

16. A clock according to claim 14, wherein the angle α is between 90° and 180° .

17. A clock according to claim 14, wherein the angle α is between 180° and 270° .

18. A clock according to claim 1, wherein the surface of the clock face when viewed in a clockwise direction is formed of differing wave or zig-zag shaped heights arranged in one of a regular and irregular pattern.

19. A clock according to claim 1, wherein the clock has a modified clock-work mechanism suitable for remote control and the clock-work mechanism combines bearings enabling the hands to pivot and rotate and the controls into an integrated clock-work drive mechanism.

20. A clock according to claim 1, wherein the clock has a conventional, unmodified clock-work mechanism, and bearings enabling the hands to pivot and rotate and the controls are combined into a secondary motion which has input arbors which mesh with motion arbors.

21. A clock comprising:

a clock face having at least one hand,

a clock-work mechanism having at least one motion arbor to move said at least one hand around a first axis of rotation of said at least one hand,

 said at least one hand being pivotably anchored at an inner end, which is adjacent to said first axis of rotation, around a second axis perpendicular to said first axis of rotation, and perpendicular to a third pivoting axis which lies in a plane containing a longitudinal axis of the hand,

 said at least one hand, at or near said inner end, being attached around said third axis of rotation running longitudinally to said at least one hand, in such a manner that said at least one hand can rotate about said third axis of rotation,

 said clock face, when viewed in a clock-wise direction, having a surface which is not symmetric to a rotation of said at least one hand around said first axis of rotation,

 a control with which said at least one hand is pivoted in such a manner that said at least one hand moves above said surface of said clock face at an essentially constant distance,

 an additional control with which said at least one hand is rotated around said third axis of rotation such that in its rotation about said first axis of rotation it moves essentially parallel to said surface of said clock face,

 said at least one hand being two-dimensional in a visible area as viewed substantially along said first axis of rotation.